

Math 0361

Practice Test Final

1. $\frac{5+6(3+1)}{9^2+5}$

$$\frac{5+24}{81+5} = \frac{29}{86}$$

2. $\frac{x}{z} + 2y$ if $x=10$, $y=5$, $z=2$

$$\frac{10}{2} + 2(5)$$

$$5 + 10 = 15$$

3. Subtract $8y+7$ from $6y-7$

2nd equation $6y-7$

$$\begin{array}{r} 6y-7 \\ -8y+7 \\ \hline -2y-14 \end{array}$$

change signs

4. Write the following phrase as an algebraic expression and simplify. Let x represent unknown number.

Triple a number, minus the sum of number and five

$$3x - (x+5)$$

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$$3x - x - 5$$

$$2x - 5$$

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$$\boxed{2x-5}$$

5.

$$6y + 2(y - 9) = 3(y + 1) - 2$$

$$6y + 2y - 18 = 3y + 3 - 2$$

$$8y - 18 = 3y + 1$$

$$\begin{array}{r} 8y - 18 \\ -3y + 18 \\ \hline 5y \end{array} = \begin{array}{r} 3y + 1 \\ -3y + 18 \\ \hline 19 \end{array}$$

$$\frac{5y}{5}$$

$$= \frac{19}{5}$$

$$y = \frac{19}{5}$$

6.

$$\left(\frac{45}{9}\right)x - \frac{1}{3}(9) = 3(9)$$

Multiply Top
by biggest
bottom number

$$\frac{45x}{9} - \frac{9}{3} = 27$$

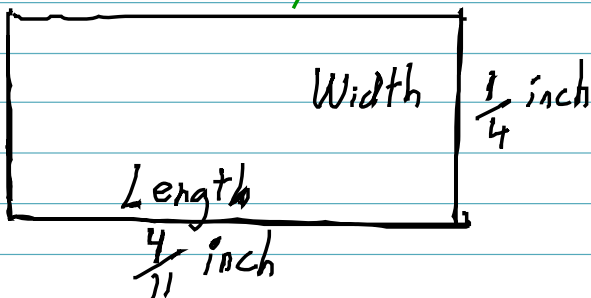
$$\frac{45x}{9} - 3 = 27$$

$$\frac{45x}{9} = \frac{30}{5}$$

$$x = 6$$

7. Find area of figure below

Multiply



$$\frac{4}{11} \cdot \frac{1}{4} = \frac{1}{11}$$

8. Substitute the given values into formula and solve for unknown variable

$$A = \frac{1}{2}(B + b)h ; A = 75, b = 9, B = 6, h = ?$$

$$75 = \frac{1}{2}(6 + 9)h$$

$$75 = \frac{15}{2}h$$

$$\frac{150}{15} = \frac{15h}{15}$$

$$h = 10$$

9. $y = -4x + 6$

x	y
0	6
1	2
2	-2

$$-4(0) + 6$$

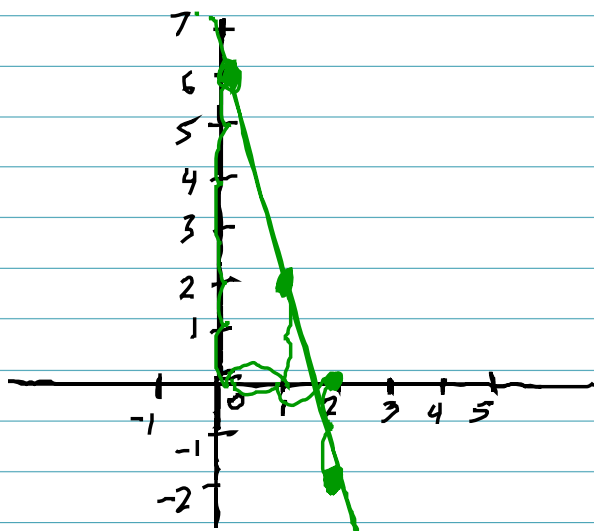
$$0 + 6 = 6$$

$$-4(1) + 6$$

$$-4 + 6 = 2$$

$$-4(2) + 6$$

$$-8 + 6 = -2$$

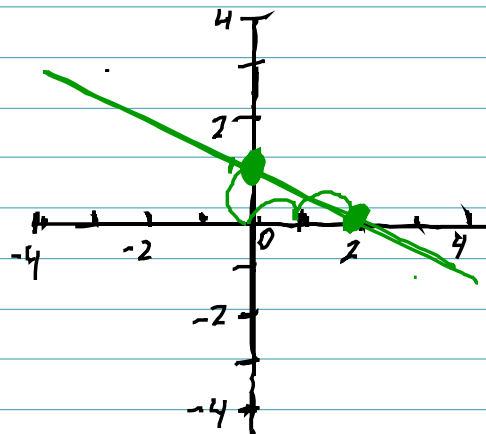


10. Graph

$$y = -\frac{1}{2}x + 1$$

Slope = $-\frac{1}{2}$ Down 1
Right 2

y intercept = 1 (start point)

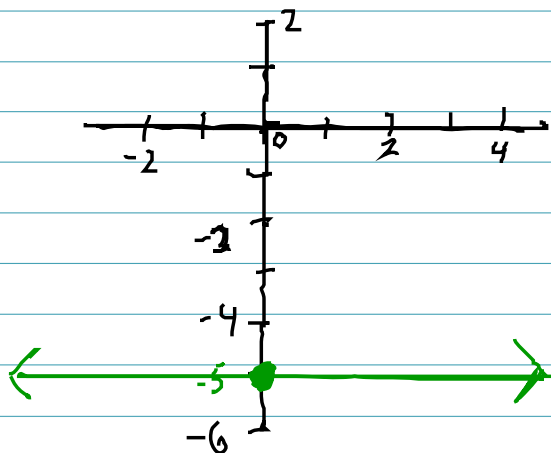


11.

$$y = -5$$

or $y = \text{Any number}$

Horizontal
Line



12.

$$x - 3y = 9$$

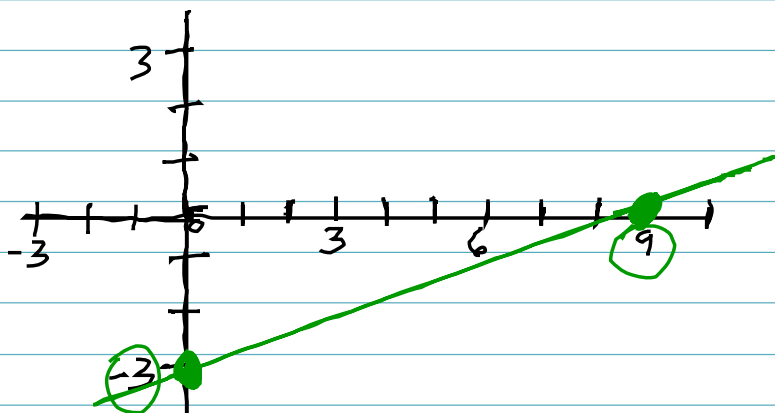
Ignore x

$$\frac{-3y}{-3} = \frac{9}{-3}$$

$$y = -3$$

Ignore y

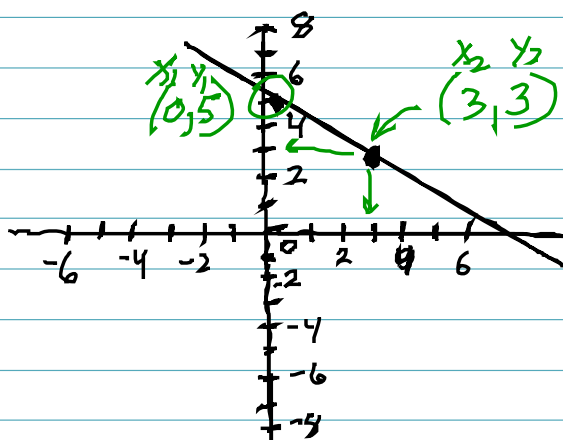
$$x = 9$$



13. Find the slope

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{3 - 5}{3 - 0} = \boxed{\frac{-2}{3}}$$

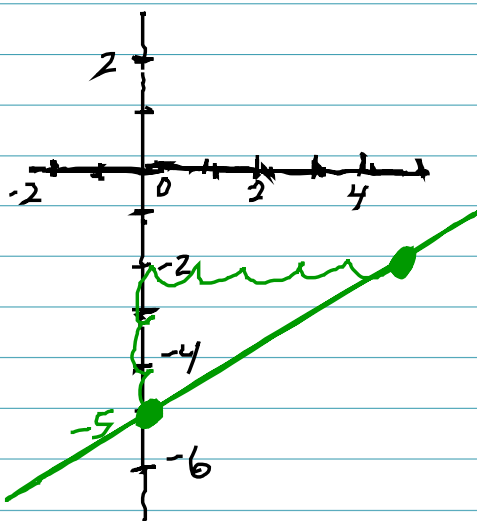


14. Use slope-intercept form to graph

$$y = \frac{3}{5}x - 5$$

$$\text{Slope} = \frac{3}{5} \quad \begin{array}{l} \text{Up 3} \\ \text{Right 5} \end{array}$$

Y-intercept = -5
(start)



15. Find equation of line

Slope = $-\frac{1}{3}$, through $(-3, -6)$
 m x y

$$y = mx + b$$

Find "b" Plug in everything we know

$$-6 = -\frac{1}{3}(-3) + b$$

$$-6 = \frac{1}{1} + b$$

$$-6 = 1 + b$$

$$\begin{array}{r} -1 \\ -1 \\ \hline -7 = b \end{array}$$

$$b = -7$$

Finally, replace m and b

$$y = -\frac{1}{3}x - 7$$

16.

$x^9 x^8$ Add = x^{17}

17.

$\left(\frac{1}{4}\right)^{-2}$ reciprocal

$$\left(\frac{4}{1}\right)^2 = \frac{4^2}{1^2} = \frac{16}{1} = 16$$

18.

$\frac{y^{-4}}{y} = \frac{1}{y^4 y^1}$

if nothing entered write "1"

$$= \frac{1}{y^5}$$

19.

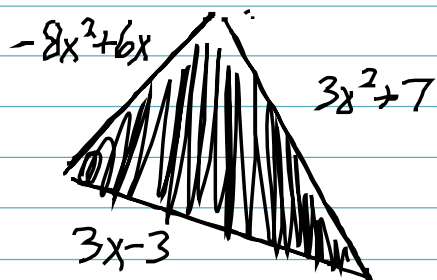
$(-2x^4 y^{-5})(3x^{-1} y^3)$

$-6x^3 y^{-2}$

$$\frac{-6x^3}{y^2}$$

20. Find perimeter

Add all sides



$$\begin{array}{r} -8x^2 + 6x \\ 3x^2 \quad 3x - 3 \\ \quad \quad + 7 \\ \hline -5x^2 + 9x + 4 \end{array}$$

21.

$$(4x^7)(-3x^7)(4x^8)$$

$$-12 \times 4 = -48$$

$$7 + 7 + 8 = 22$$

$$\rightarrow -48x^{22}$$

22.

$$(2x-7)(3x+5)$$

$$6x^2 + 10x - 21x - 35$$

$$6x^2 - 11x - 35$$

23.

$$(4x-2y)^2$$

$$(4x-2y)(4x-2y)$$

$$16x^2 - 8xy - 8xy + 4y^2$$

$$16x^2 - 16xy + 4y^2$$

24.

$$\frac{8x^2 + 18x + 2}{4x + 3}$$

$$\begin{array}{r} 2x + 3 \\ (4x + 3) \overline{) 8x^2 + 18x + 2} \\ \underline{- 8x^2 - 6x} \\ 12x + 2 \\ \underline{- 12x - 9} \\ -7 \end{array}$$

$$\boxed{2x + 3 - \frac{7}{4x + 3}}$$

25. Factor by grouping

$$\left(\frac{5xy}{5x} - \frac{15x}{5x} \right) + \left(\frac{2y-6}{2} \right)$$

$$(5x)(y-3) + 2(y-3)$$

parenthesis / Nonparenthesis

$$\boxed{(y-3)(5x+2)}$$